

Senior Flexonics Pathway Metroflex Dampers has supplied more than 800 single blade diverters worldwide since 1976 and continues to be a gas turbine technological leader.

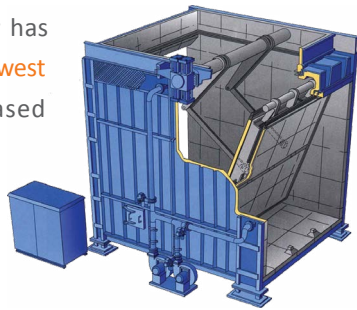
### COMPLETE BYPASS SYSTEM

SFP Metroflex Dampers (SFP) can provide an entire gas turbine exhaust system as a turnkey package, including transition ducts, diverter damper, expansion joints, bypass stack, silencer, and support structure.

Components can be fabricated at our Maine or Texas facilities, or our approved international subcontractors.

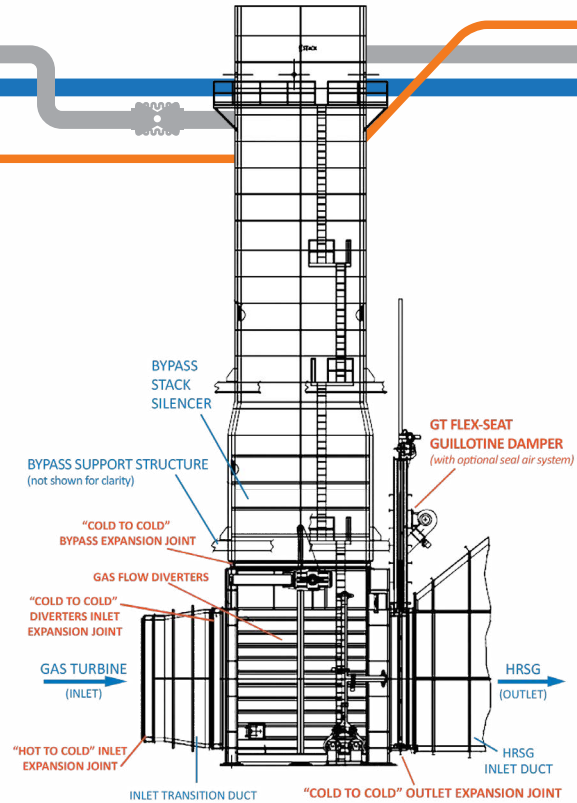
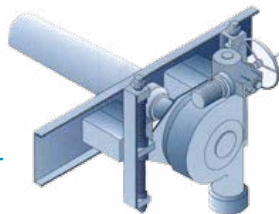
### TOGGLE & PIVOT DRIVES

SFP's Toggle drive diverter has been designed for today's newest gas turbines. The increased mechanical advantage of the toggle drive system allows users to step/modulate even the largest diverters during full load operation.



Pivot Drive diverters are a cost effective solution for users looking to convert an older existing simple cycle system into a combined cycle unit. Pivot drives are traditionally used for diverters under 14' square.

Custom Actuator

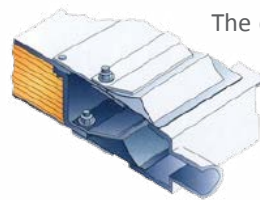


### BEARING DESIGN

SFP has designed a custom bearing specifically for demanding diverter applications. These self-aligning, permanently lubricated bearings are designed for the large slow moving radial loads common to diverters, providing highly reliable, non-jamming performance.



### DUPLEX SEALING SYSTEM



The duplex sealing systems consists of two sets of two rows of flexible alloy seals around the perimeter of the blade, sealing each diverter outlet. Application of pressurized sealing air allows for man-safe isolation of downstream equipment.

### DRIVE OPTIONS

SFP can design a custom actuation system around user preferences. Electric actuators with self-locking gearboxes are common and economical option for smaller diverters, while larger units often require the torque of a fail-safe electro-hydraulic system. These systems are custom designed to meet all end user interface and instrumentation requirements, while providing years of trouble free operation.

## SMALL DIVERTER VALVES

The economical Small Diverter Valves (SDV) are designed for today's smaller gas turbines. The SDV's share many design features with it's larger counterparts, including blade design and Duplex seal arrangement, and provide the same levels of isolation and modulation performance. The SDV is easily shipped worldwide, and is a great solution for renewable energy load following and cycling gas turbines.

## GUILLOTINE DESIGN

SFP Metroflex Dampers' unique Flex-Seat Guillotine design allows for rapid thermal expansion without binding or warping.

The Flex-Seat sealing system allows for tight shutoff and man-safe isolation with seal air.

Our rack and pinion drive arrangement allows for smooth, maintenance free operation in all temperature ranges without maintenance or adjustment.

The guillotine blades can be insulated to reduce shut down heat loss.



## INTAKE AND HRSG STACK ISOLATORS

Intake Isolators are typically flap or louver dampers located in the gas turbine intake ducting. These help prevent the gas turbine from "wind milling" and reduce heat loss during a shut down resulting in faster restart times.

SFP's stack isolation louver dampers are used to maintain temperatures in the HRSG during shut downs. These dampers can come equipped with an over pressurization protection system that allows the damper to open automatically if the turbine is started without signaling the damper to open.

## FLOATING BLADE DESIGN

The key pivoting section of an SFP Metroflex Diverter is a sophisticated assembly consisting of two insulated floating blades, one on either side of a central support structure, designed to accommodate rapid differential thermal expansion.

This design is far superior to other designs that are solid welded structures, which tend to bind and warp due to the high system temperatures, reducing sealing efficiency.



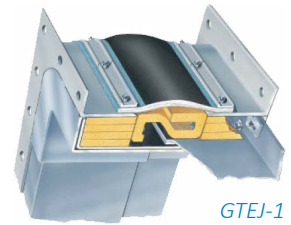
## HRSG PENETRATION SEALS



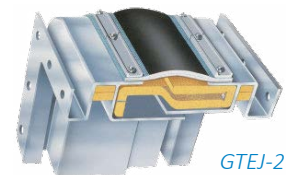
For leaking metal bellows HRSG penetration seals, SFP offers a non-welded, repairable membrane solution which can be installed in situ. Ask for the Penetration Seals flyer for more information.

## EXPANSION JOINTS

Gas turbine expansion joints must withstand thermal shock caused by rapid temperature rise of gas turbine start-ups. The SFP design avoids warping, binding, cracking, and leakage of flue gas.



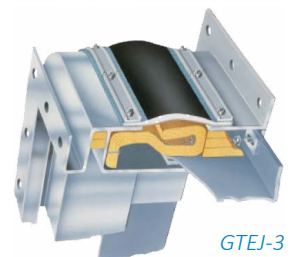
All combinations of internally and externally insulated components can be joined by SFP's three models:



**GTEJ-1** Cold frame to Cold frame

**GTEJ-2** Hot frame to Hot frame

**GTEJ-3** Hot frame to Cold frame



## ON-SITE SERVICE (OSS)

As one of the worlds' largest damper designer and manufacturers, SFP provides a turn-key solution which incorporates OSS for inspection, erection or project supervision and management.



[sfpathway.com](http://sfpathway.com)